In the claims

1(Canceled). A burnable used oil fuel product by the process comprising:

(a) obtaining a used oil sample having at least 1% (by weight) aqueous substances;

(b) creating a used oil stream to form the used oil sample;

([b]c) heating the used oil ~~sample~~ stream to a temperature of from about 20°C to about 60°C to form a heated used oil stream; and

([c]d) extracting, in a continuous process, a volume of water from the heated used oil stream by adding super critical CO_2.

2(Canceled). The method of claim 1, further including the steps of:

(f) when the percentage is not above the predetermined level, conventionally heating the waste oil to form a heated oil;

(g) proceeding to step (c).

3(Canceled). The method of claim 1 wherein step (b) further includes the step of:

(b1) preheating the waste oil.

4(Canceled). The burnable used oil fuel product of claim 3 wherein the microwave heating energy has a frequency of about 2.45 GHz.

5(Canceled). The burnable used oil fuel product of claim 1 wherein the extraction step is performed in a trapping vessel having a bottom valve for removing bottom components and a means for regulating pressure, whereby water and extracted solid constituents are removed from ~~the~~ a bottom vessel.

6(Cancelled). The method of claim 1, wherein step (b) further includes the steps of:

(b1) adjusting a microwave energy based on the percentage of water.

7(Canceled). A process for recovering burnable used oil fuel from a used oil sample, process comprising:

(a) obtaining a used oil sample having at least 1% (by weight) aqueous substances;

(b) creating a used oil stream form the used oil sample without a dewatering step;

(c) testing the used oil stream for an percentage of water;

([b]d) when the used oil stream has greater than 4% water, microwave heating the used oil stream to a temperature of from about 20°C to about 60°C to form a heated used oil stream; and

([c]e) extracting, in a continuous process, a volume of water from the heated used oil stream by adding super critical CO_2.

8(Canceled). An apparatus for purifying waste oil, comprising:

a supply of waste oil;

a preprocessing analyzer section connected to an output stream of the supply of waste oil;

a preprocessing switch controlled by the analyzer section having an input connected an analyzer section output, the preprocessing switch having a first output and a second output;

a conventional heating section connected to the first output;

a microwave heating section connected to the second output; and

a demulsification section connected to a conventional heating output and connected to a microwave heating output.

9(Canceled) The apparatus of claim 8, further including a preheating section connected between the supply of waste oil and the preprocessing switch.

10(Canceled). The process for recovering burnable used oil fuel from a used oil sample of claim 9 wherein the microwave heating energy [is] has a frequency of about 2.45 GHz.

11(Canceled). The process for recovering burnable used oil fuel from a used oil sample of claim 7 wherein the extraction step is performed in a trapping vessel having a bottom valve for removing bottom components and a means for regulating pressure, whereby water and extracted solid constituents are removed from ~~the~~ a bottom vessel.

12(Cancelled). The apparatus of claim 8, wherein the preprocessing analyzer section includes a net oil analyzer.

13(Previously Presented). An apparatus for purifying waste oil, comprising:

(a) a preprocessing analyzer section connected to an input stream for waste oil and an output;

(b) a preprocessing switch controlled by the analyzer section having an input connected to an analyzer section output and an output, the preprocessing switch having a first output and a second output;

(c) a heating section connected to the first output of the preprocessing switch and a microwave heating section connected to the second output; and

(d) a demulsification section connected a heating output and having an output lower for settling.

14(Presently Presented). The apparatus for purifying waste oil of claim 13 wherein the apparatus further comprises a preheating section connected before of the preprocessing switch.

15(Original). The apparatus of claim 14, wherein said waveguide includes a straight member between a first end and a second end, the first end is a curved member having a 45° "H" -plane bend of miter construction.

16(Original). The apparatus of claim 8, wherein the microwave heating section includes a sensor that determines a reflected energy.

17(Previously Presented). The apparatus for purifying waste oil of claim 15 wherein the waveguide includes a straight member between a first end and a second end, the first end is a curved member having a 45° "H" plane bend of miter construction.

18(Original). The method of claim 17, wherein the step (a) further includes the steps of:

(a1) determining a percentage of water in the waste oil stream;

(a2) adjusting a flow rate of the waste oil stream based on the percentage of water.

19(Original). The method of claim 17, wherein the step (a) further includes the steps of:

(a1) determining a percentage of water in the waste oil stream;

(a2) adjusting an amplitude of a heating microwave based on the percentage of water.

20(Previously Presented). The apparatus for purifying waste oil of claim 19 wherein the apparatus further comprises an analyzer section after the pump that determines a percentage of water in the waste oil stream feed.

21(Withdrawn). The method of claim 17, wherein step (b) further includes the step of:

(b1) mixing a chemical demulsifier in the heated oil stream.

22(Currently Amended). The apparatus for purifying waste oil of claim ~~21~~ 20 wherein the microwave heating section further comprises a sensor connected to the microwave generator for determining an amount of reflected energy.

23(Canceled). The process for recovering burnable used oil fuel from a used oil sample of claim 7, further including the steps of:

(f) when the used oil stream is not greater than 4% water, conventionally heating the used oil stream to a temperature of from about 20°C to about 60°C to form a heated used oil stream; and

(g) extracting, in a continuous process, a volume of water from the heated used oil stream by adding super critical CO_2.